

Plan for the
Development of
Oil and Gas
Resources
within a
Sage-Grouse
Core
Population
Area



**Douglas Core Area
Converse County, Wyoming**

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**Chesapeake Operating, Inc. and Access Midstream
Plan for the Development of Oil and Gas Resources
Within the Douglas Core Area, Converse County, Wyoming**

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Chesapeake Operating, Inc. and Access Midstream Plan for the Development of Oil and Gas Resources within the Douglas Core Area, Converse County, Wyoming

1.0 Plan Elements

Chesapeake Operating Inc. (Chesapeake) offers the following plan to develop oil and gas resources while contributing to the restoration of greater sage-grouse (hereafter sage-grouse) habitat within the Douglas Greater Sage-Grouse Core Population Area (DCA) in conjunction with the requirements of the Greater Sage-Grouse Core Area Protection Executive Order 2011-5 (EO). The DCA is one of 31 Wyoming Core Population Areas (CPA) and is located within Converse County, Wyoming. Chesapeake is proposing this DCA Development Plan (Plan) as a framework for the development of oil and gas resources within the DCA in a reasonable, orderly, and environmentally conscious manner with the purpose of fulfilling the EO requirement to develop sustainable and prudent management practices aimed at maintaining populations of sage-grouse populations in the DCA. Because of the complexities and evolving management practices associated with sage-grouse habitat conservation, this Plan will propose three distinct DCA oil and gas development management areas relative to sage-grouse habitat. Each of these areas will have unique and specific oil and gas development management strategies designed to meet EO expectations. The primary focus of the strategies set herein are to allow lease development while concurrently avoiding suitable sage-grouse habitat as reasonably as possible, minimizing habitat fragmentation, and mitigating or restoring select areas to improve the sage-grouse habitat which should ultimately maintain a population of sage-grouse in the DCA.

Although Chesapeake is the main proponent of this Plan, Access Midstream (Access), as the lead pipeline infrastructure company within the DCA, has agreed to partner with Chesapeake to collaboratively and responsibly develop within the agreed upon Plan. When the Plan states that Chesapeake proposes a specific management strategy it is implied that Access (or any future pipeline operator within the DCA) and all Chesapeake contractors will also agree to adhere to the Plan. All contractors (drillers, water haulers, pumpers, natural resource consultants, construction, etc) will be provided direction to adhere with the management strategies of this Plan.

This Plan is formatted according to the following sections:

- Introduction
- Delineation of DCA Habitat
- DCA Sage-Grouse Management Areas
- Avoidance, Minimization, and Restoration Commitments
- Performance Criteria and Limitations
- Summary of Plan

2.0 Introduction

The decision to list the sage-grouse as a Threatened or Endangered Species under the Endangered Species Act (ESA) has been one of the most contentious wildlife issues in recent years. The listing of the sage-grouse would have the potential to impact millions of acres of Western lands and uses of those lands including ranching, urban development, mining, and oil and gas development. The lands affected would include federal, state and private acreage within the current range of the sage-grouse that extends through portions of eleven Western States. The U.S. Fish & Wildlife Service (FWS) was first petitioned in 1999 to consider listing the sage-grouse due to declining populations and loss or threats to their habitat. The FWS will issue its proposed listing decision in September 2015, with final listing decision in September 2016. While candidate species receive no protection under the ESA, the FWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the ESA.

In an effort to proactively protect the sage-grouse and address a potential ESA listing, the State of Wyoming (State) developed the sage-grouse CPA strategy. Wyoming's CPAs encompass roughly 25% of the state surface and are estimated to contain 83.1% of Wyoming's sage-grouse population. The CPA strategy was enacted under State of Wyoming Executive Department Executive Order 2008-2 and then modified under EO 2011-5, which is the current primary enforcement mechanism for the protection of sage-grouse in Wyoming. The EO states that new development or land uses within CPAs should be authorized or conducted only when it can be demonstrated that the activity will not cause declines in sage-grouse populations. The FWS reviewed the CPA strategy and determined it was a sound-science-based framework by which to conserve sage-grouse in Wyoming and "provides an excellent model for meaningful conservation of sage-grouse across its range, if fully supported and implemented" (November 10, 2010 FWS-State correspondence referenced in 2011-5 EO, page 2).

The EO contains a number of stipulations to achieve its goal. One that creates a particular challenge in the DCA is the limitation on surface disturbance of suitable sage-grouse habitat to <5%. Per the EO, acreage within CPAs is assumed to be suitable habitat and therefore any disturbance could count toward the 5% maximum limit. This cap is especially problematic in the DCA since the surface disturbance including suitable habitat prior to the EO implementation was well above 15%. Northeastern Wyoming has large sagebrush treated acreages historically converted to grassland or cropland and the existing sagebrush habitats rarely exceed sufficient canopy cover (2011-5 EO, Stipulation #8, page 10). In addition, the DCA contains large disturbed wildfire burn areas that do not contain suitable sage-grouse habitat and contribute to the pre-EO disturbance. To further compromise this less than optimum CPA; the sage-grouse population in this most southeastern Wyoming sage-grouse range CPA was minimal prior to the EO implementation containing only four occupied leks within the 88,159 acres. Wyoming Game and Fish Department's (WGFD) sage-grouse job completion report lek survey data from 1995 to 2013 indicates 12 average males/active lek, with a high male attendance in 2005 (29) and low in 2011 (2), consistent with regional and statewide trends.

Chesapeake Exploration, L.L.C., who develops and operates its leasehold through its agent Chesapeake Operating, Inc., (collectively "Chesapeake") started acquiring oil and gas leases in this area in 2007 and currently holds valid leases in much of the DCA. Under the terms of the leases, Chesapeake must either drill these leases prior to their expirations or spend significant

additional funds to acquire extensions to maintain the lease rights. Chesapeake also has an implied duty to its Lessors under its leases to protect correlative rights and prevent waste of the leased resource, both of which could occur without timely development of its leasehold. The EO states that “existing rights should be recognized and respected” (EO 2011-5, page 3).

Chesapeake, understanding the importance of the CPA strategy for Wyoming, is voluntarily providing this Plan to the State. The Plan allows for developing the energy resources incrementally while avoiding key habitat areas, minimizing disturbances through the select location of well pads and development facilities, minimizing disturbances through reducing the surface footprint of development activities, implementing best management practices (BMPs) to reduce impact to the sage-grouse, and providing generous funds for restoration and mitigation opportunities to rehabilitate current sage-grouse habitat.

3.0 Delineation of DCA Habitat

Evaluation of sage-grouse habitat was central to the delineation of the three management areas. Sage-grouse are dependent upon sagebrush and sagebrush habitats throughout their life cycle. They select seasonal habitats within their home range to breed, nest, rear young, and winter. Suitable breeding, nesting, and winter habitat occurs where plant communities are dominated by sagebrush containing a diverse mix of native grasses and forbs. Suitable summer sage-grouse habitat includes areas containing succulent herbaceous vegetation (e.g. mesic draws, wet meadows, riparian areas) and insects in close proximity to sagebrush. Seasonal habitats typically occur in a patchwork or mosaic across the landscape and the amount, spatial arrangement, and condition of the seasonal habitats determine the landscape’s potential to sustain sage-grouse populations.

Generally, sage-grouse inhabit areas with larger more contiguous sagebrush patches connecting key seasonal habitats and where anthropogenic disturbances are not widespread. Conversely, a landscape with discontinuous or sparse sagebrush patches in association with widespread anthropogenic disturbances is less likely to contain important seasonal habitats required to perpetuate sage-grouse. As previously noted, the DCA is highly disturbed and expanses of sagebrush or important seasonal habitats do not occur contiguously across the landscape. Understandably, this high level of disturbance within the DCA does not preclude sage-grouse presence and optimal restoration efforts connecting sage-grouse habitat could potentially enhance sage-grouse populations within the DCA. Information within the Wyoming Geographic Information Science Center’s (WYGISC) statewide surface disturbance database indicates the total surface disturbance within the DCA was approximately 15% prior to the incorporation as a CPA. If pre-1994 sagebrush treatment areas are included, the percentage of disturbed and unsuitable habitat in the DCA increases to approximately 22%.

A number of factors were considered in the delineation of the oil and gas management areas around which the elements of this Plan are built. Because sage-grouse are sagebrush obligates and their survival and reproduction are essentially dependent upon sagebrush habitat, the distribution of the shrub was one of the primary components used to characterize lands within the DCA as either suitable or unsuitable sage-grouse habitat. Additionally, biological data and principles, current land use, and anthropogenic disturbances were also used to ultimately determine habitat suitability and place lands within one of the three distinct management areas (Figure 1).

The following identifies the specific biological and land use data utilized to characterize and develop these management areas.

Biological Data and Assumptions

Leks were considered to be the center of annual home ranges for what is generally assumed to be non-migratory sage-grouse populations within the DCA, which may represent an important population for genetic connectivity between management zones.

1. WGFD 2012 sage-grouse lek point data was obtained and plotted on project maps (Figure 2). Four occupied leks occur within the DCA: East Antelope #1, Bill Hall, Bill Hall #2, and Flat Top. The East Antelope #2 lek is classified as undetermined and is not included as it does not receive management protection as per the EO. (Information accessed on-line @ ftp://gf.state.wy.us/Sage_Grouse_Lek_Data - shapefile used leks_iam.shp).
2. A radius of 0.6-miles was placed around each lek to establish a No Surface Occupancy (NSO) buffer (Figures 1 and 2). The 0.6-mile radius is a recommended protective zone within the EO where there are to be no surface facilities. All lands within an NSO were assumed to be high quality and/or important to sage-grouse during the breeding season. The lone exception was for the northwestern portion of the Flat Top lek NSO. This area was excluded as high quality habitat due to the presence of a recent wildfire and small stands of evergreen trees.
3. The majority (74.4%) of hens typically nest within four miles of a lek and sagebrush habitats within this distance have a greater probability for use by sage-grouse for nesting and early brood-rearing (Holloran M.J. and S. H. Anderson. 2005. Spatial Distribution of Greater Sage-Grouse Nests in Relatively Contiguous Sagebrush Habitats. Condor 107:742-752).
4. Areas >4-miles from occupied leks containing an array of juxtaposed sagebrush patches were also included as suitable sage-grouse habitat. Inclusion of these areas was supported by site specific habitat data (i.e. transects described below) or observations of sage-grouse or their sign obtained during field surveys by WEST, Inc. biologists from January 2011 through December 2012.
5. WGFD sage-grouse observations obtained from their Wildlife Observation System database (Figure 2). Approximately 66 observation entries from 2003 to present within the DCA were used to identify areas historically used by sage-grouse during the breeding, nesting, brood-rearing and winter. (Data provided by Justin Binfet - WGFD Wildlife Supervisor in 2011).

Land Cover and Use Determinations

Sagebrush was considered the essential component necessary for an area to be considered as suitable sage-grouse habitat. The following resources or information were used to determine sagebrush presence or absence within an area:

1. High resolution proprietary aerial imagery (15cm resolution) of 82% of the DCA was utilized to characterize sage brush habitat. Chesapeake provided this imagery and

resolution was sufficient to identify patches of sagebrush across the landscape from desktop delineations.

2. 2012 National Agricultural Imagery Program (NAIP) and Bing Maps aerial imagery were used to determine the occurrence of sagebrush within the 18% of the DCA where high resolution imagery was not available.
3. Sagebrush canopy cover data collected from 156 transects spaced throughout the DCA. Chesapeake wildlife consultants had quantified sagebrush canopy along transects over the past two years and the data was used in conjunction with the imagery to identify sage-grouse habitat suitability within an area. Transects were classified as containing <5%, 5-10%, and >10% sagebrush canopy cover, color coded and overlaid on project maps to aid in delineation of the management areas (Figure 2).
4. Previous qualitative mapping efforts by WGFD personnel within the DCA were utilized to further define proposed management areas. In September 2012 the WGFD provided Chesapeake with a map that identified six potentially important sage-grouse habitats as delineated during a road side survey (Figure 2). This information was reviewed and incorporated into desktop delineations using aerial imagery and transect data.
5. Aerial imagery was used to identify existing surface disturbances within the DCA (Figure 1 “Known Disturbances”). The majority of the disturbances have been previously digitized and accepted by the WYGISC & WGFD in regards to Density and Disturbance Calculation Tool (DDCT) analyses in the DCA. These disturbances included wildfires or anthropogenic disturbances primarily devoid of sagebrush. Therefore, these areas were not considered suitable sage-grouse habitat.
6. Aerial imagery was also used to identify areas where vegetative treatments occurred or agricultural fields existed prior to 1994 that contained sparse or no sagebrush (Figure 1 “Pre 1994 Disturbance with Unsuitable Habitat”). Again the majority of these areas had been previously delineated and submitted to WYGISC and WGFD for use in DDCT compliance reviews with the EO. Delineations as unsuitable habitat was supported by aerial imagery or local knowledge obtained during field surveys conducted by qualified third party biologists from January 2011 through December 2012.
7. The above information was then used to delineate polygons around areas or landscapes that should be avoided or where specific management practices should be implemented to allow further mineral lease development while minimizing habitat fragmentation. The data and methods used to delineate the management areas parallel how the Sage-Grouse Implementation Team (SGIT) developed CPAs. Both processes used sage-grouse leks and observations, aerial imagery, sagebrush cover, local knowledge of site specific conditions and man-made surface disturbance footprints to identify important sage-grouse habitats within an area.

4.0 DCA Sage-Grouse Management Areas

The habitat delineation effort identified three management areas relative to sage-grouse habitat and oil and gas development within the DCA. These have been designated as Areas A, B, and C and are described below along with oil and gas development management objectives relative to

Chesapeake and the State for each identified area. Restoration opportunities are not limited to the boundaries of the three oil and gas development management areas. It is anticipated that select restoration areas could be designated within or adjacent to the three management areas subject to landowner approval and identification of optimum habitat restoration field conditions, with primary focus in or immediately adjacent to Area A.

Area A - Predominantly High Quality Sage-Grouse Habitat that Supports Leks (9,629 acres)

Area A has been identified as containing higher quality of sagebrush cover within the DCA and is adjacent to the lek areas with documented sage-grouse activity (Figure 1). As such it is considered as a habitat area where new development should be avoided to the maximum extent operationally practical to maintain sage-grouse habitat. Examples of avoidance measures that would be operationally impractical include, but are not limited to, technological limitations, lease restraints, economics, and landowner concerns. Where development is proposed, it will be on a case-by-case basis accompanied with a rationale for an exception to the general provision of avoidance in this habitat area.

Based on this Plan, the State and WGFD agree that exceptions as detailed below to develop within Area A will be considered. These exceptions will be presented to WGFD, relative permit agencies, and the State followed by a meeting and optional site visit. Except as described below, no development or disturbance activities will be conducted in Area A within the deferral period without review and approval from the State.

Chesapeake Management Objectives for Area A:

- Chesapeake will defer new disturbance that is related to development of the resources within Area A for 3 years in order to reduce lek impacts and minimize habitat fragmentation unless development is necessary to prevent lease termination, meet lease obligations, or reduce flaring from existing wells. Neither Chesapeake nor Access will apply for new oil and gas permits or other relevant permits from county, state, or federal permit agencies for new pads, roads, pipelines, or water wells within Area A within the 3 year deferral period without review and approval from the State. Following deferral which will end in March of 2016, the State, WGFD, Chesapeake and Access will evaluate the success of the avoidance measures and any reclamation or restoration to determine whether an extension of the development deferral is warranted or if additional protective measures should be considered. The following are case-by-case scenarios and exceptions for which Chesapeake and/or Access may propose development within Area A during the deferral period.
 - 1) Development and disturbance necessary in order to meet lease obligations such that the drilling of the well cannot be reasonably delayed and/or the oil and gas cannot be economically, technologically, and feasibly obtained by use of longer laterals from pads outside of Area A.
 - Chesapeake holds oil and gas leases in Section 15, T33N-R69W that will terminate in 2015. If Chesapeake is unable to obtain reasonable lease extensions, Chesapeake intends to develop these leases which will include

building a well pad, facilities pad, access road, pipeline, and the drilling and completion of at least one well.

- 2) Development and minimal disturbance within Area A necessary to drill additional wells on existing pads or add pipeline servicing existing pads while using existing access roads. Activity on existing roads or additional pipeline activity to existing pads would be conducted within all EO stipulations.
 - Chesapeake may request exceptions to drill in 2013 up to two additional wells on the existing Rochelle 14-33-69 A pad located in Section 14, T33N-R69W utilizing existing access roads to meet 2014 lease obligations. Chesapeake and Access will make every attempt to reroute the required pipeline to this well and will consult with WGFD to reduce impacts. If new permits are required, Chesapeake and Access will work with WGFD and the relevant permit agencies.
- 3) Construction of pipelines needed to transport products in an effort to avoid extensive or unnecessary flaring from both existing pads or from subsequently drilled wells. If Access does not receive approval from WGFD to build the pipeline within Area A and existing wells would require flaring then Chesapeake requests that the State and the Wyoming Oil and Gas Conservation Commission (WOGCC) agree to extend Chesapeake flaring permits within the WOGCC regulations.
 - Access may construct pipelines to connect the following existing Chesapeake drilled and completed wells for the purpose of alleviating long term flaring: Crawford 1-33-69, Krause 10-33-69, and York Ranch 31-33-69 wells located in Sections 1, 10, and 31, T33N-R69W, respectively. Chesapeake and Access will make every attempt to reroute the pipelines to reduce impacts.

Note: Additional unforeseen circumstances not contemplated in this Plan may require Chesapeake and/or Access to seek additional exceptions.

- Chesapeake has developed and implemented a Chesapeake DCA Traffic Plan (Traffic Plan) to avoid or reduce oil-field traffic through sage-grouse management Area A in accordance with applicable EO transportation and seasonal stipulations. The Traffic Plan includes management processes to reduce traffic on county roads within 1.9 miles and access roads within 0.6 mile of occupied sage-grouse leks to comply with EO transportation stipulations. Additionally, the Traffic Plan avoids routine traffic from 6:00 p.m. to 8:00 a.m., at a minimum from March 1 to May 15 to help reduce noise impacts from traffic at the perimeter of the known leks. In addition, Chesapeake (with appropriate county or landowner permission) placed signage on county and access roads to further support the EO transportation and noise stipulations.
- Chesapeake or Access will conduct a natural resource site assessment to verify that well pads, roads, and pipelines will be located, to the extent operationally practical, in unsuitable or low-quality sage-grouse habitat. Chesapeake or Access, to the extent operationally practical, will co-locate new disturbances within existing disturbances to minimize fragmentation to sagebrush habitat. Findings from the site assessment will be reported on the DDCT worksheet submitted for WGFD DDCT review and subsequent

permit agency recommendation letter. All disturbance activity within 2 miles of the perimeter of a lek will be identified in the DDCT worksheet.

- Chesapeake will comply with 2011-5 EO stipulations (i.e., seasonal use, transportation, reclamation, DDCT, density, and noise) for applicable development within Area A, including disturbed or pink areas on Figure 1.
- Chesapeake has 3 existing pads in Area A where development of additional wells and pipelines utilizing existing roads may be requested. Such additional wells, pipelines, and existing road use will be developed and utilized by Chesapeake in a reasonable manner within EO stipulations in an effort to cause the least amount of decline in the sage-grouse population or habitat. Under this Plan, Chesapeake estimates up to 11 additional well pads (most of which will have a separate facilities pad) with associated access roads and pipelines which will be deferred in Area A or relocated, if possible, into Area B or C. This would represent 55 wells that may be deferred or relocated. Chesapeake may relocate the pads, roads, and pipelines associated with the following locations outside of Area A if economically and geologically feasible using longer laterals or other mitigation practices: Sections 16, 17, 20, and 32 T33N-R69W.
- The specific references made herein to sections, townships and ranges refer to the 6th P.M. of Converse County, Wyoming.

State Management Objectives for Area A:

- As a part of this Plan, the Office of State Lands & Investments (OSLI) will extend any state leases within Area A at no cost to Chesapeake. If the OSLI is unable to extend state leases at no cost, then the OSLI, WGFD, and State will allow necessary development of such leases to prevent any state lease expirations.
- If adequate gas infrastructure cannot be put in place for existing state wells drilled on existing pads or on subsequent wells on pads approved by WGFD and State, Chesapeake requests the OSLI waive the requirement to pay royalty on flared gas which may be required under Chesapeake's State lease forms. In addition, the OSLI will waive any flaring restrictions in place until such time infrastructure is in place and the gas can be transported.
- Coordination will occur between Chesapeake and WGFD to ensure that leks are being monitored within the DCA using approved protocols.
- WGFD, Chesapeake, Access, and other appropriate entities will coordinate with other disturbance stakeholders (i.e., ranchers, other oil and gas operators, etc.) and document state and federal permitted activities through the DDCT process in an effort to support habitat avoidance to the extent possible, or the minimization of surface disturbance to reduce fragmentation.

Area B – Predominantly Suitable Habitat or Potential Connectivity Corridors (19,877 acres)

Area B has been identified as containing sagebrush cover that is predominantly considered to be suitable or represents connectivity corridors for sage-grouse (Figure 1). As such, it is considered to be an area where development can continue, pending a qualified natural resource site

assessment to verify that the development will be conducted in accordance with all EO stipulations.

Chesapeake Management Objectives for Area B:

- Chesapeake or Access will conduct a natural resource site assessment to verify that well pads, roads, and pipelines will be located, to the extent operationally practical, in unsuitable or low-quality sage-grouse habitat. Chesapeake or Access, to the extent operationally practical, will co-locate new disturbances within existing disturbances to minimize fragmentation to sagebrush habitat. Findings from the site assessment will be reported on the DDCT worksheet submitted for WGFD DDCT review and subsequent permit agency recommendation letter. All disturbance activity within 2 miles of the perimeter of a lek will be identified in the DDCT worksheet.
- Chesapeake will horizontally drill multiple wells from a single well pad that will be serviced by an adjacent facilities pad and common road and pipeline corridors where possible. This practice significantly reduces the surface disturbance resulting in diminished impacts to suitable sage-grouse habitat or connectivity corridors.
- Chesapeake will comply with 2011-5 EO stipulations (i.e., seasonal use, transportation, reclamation, DDCT, density, and noise) for applicable development within Area B.
- Chesapeake developed and implemented a Traffic Plan that is in accordance with applicable EO transportation and seasonal stipulations. See Area A section for details of the Traffic Plan.
- Chesapeake has 2 existing well pads with existing access roads and active pipelines within Area B. Proposed disturbance in Area B is estimated for 23 additional well pads (most of which will have an adjacent facilities pad) with associated access roads and pipelines.

State Management Objectives for Area B:

- Within Area B, as a part of this Plan, the OSLI will extend any state leases at no cost to Chesapeake.
- Coordination will occur between Chesapeake and WGFD to ensure that leks are being monitored within the DCA using approved protocols.
- WGFD, Chesapeake, Access, and other appropriate entities will coordinate with other disturbance stakeholders (i.e., ranchers, other oil and gas operators, etc.) and document state and federal permitted activities through the DDCT process in an effort to support habitat avoidance to the extent possible, or the minimization of surface disturbance to reduce fragmentation.

Area C - Predominantly Disturbed and Low Quality or Unsuitable Habitat (59,237 acres)

Area C has been identified as consisting of predominantly existing disturbed areas and low quality or unsuitable habitat (Figure 1). As such, it is considered to be an area where development can continue pending a qualified natural resource site assessment to verify that the

development will be conducted in accordance with EO process stipulations with the exception of seasonal use, density, and traffic management.

Chesapeake Management Objectives for Area C:

- Chesapeake or Access will conduct a natural resource site assessment to verify that well pads, roads, and pipelines will be located, to the extent operationally practical, in unsuitable or low-quality sage-grouse habitat. Chesapeake or Access, to the extent operationally practical, will co-locate new disturbances within existing disturbances to minimize fragmentation to sagebrush habitat. Findings from the site assessment will be reported on the DDCT worksheet submitted for WGFD DDCT review and subsequent permit agency recommendation letter. All disturbance activity within 2 miles of the perimeter of a lek will be identified in the DDCT worksheet.
- Chesapeake will horizontally drill multiple wells from a single well pad that will be serviced by an adjacent facilities pad and common road and pipeline corridors where possible. This practice significantly reduces the surface disturbance resulting in diminished impacts to suitable sage-grouse habitat or connectivity corridors.
- Chesapeake will comply with 2011-5 EO stipulations within Area C with the exception of: (1) seasonal use resulting in year-round activities being allowed, (2) allowance for well pad average densities >1.0 per 640 acres, and (3) less restrictive traffic considerations from those in Areas A and B. Chesapeake requests the less restrictive stipulations in accordance with the 2011-5 EO (2011-5, Att. B, page 12, #12. and page 13, #4) given that such activity in Area C is not anticipated to cause decline in sage-grouse populations.
- Chesapeake has 15 existing well pads with existing access roads and active pipelines within Area C. Proposed disturbance in Area C is estimated for 69 additional well pads (most of which will have an adjacent facilities pad) with associated miles of access roads and pipelines.

State Management Objectives for Area C:

- Coordinate with the WGFD, State and other appropriate entities to expedite required permits (drilling, water well, stormwater, right-of way, etc.) with the required DDCT documentation.
- State will grant seasonal use, density, and traffic stipulation relief within Area C to aid in reasonable development.
- Coordinate with the WGFD, State, FWS, BLM, and other appropriate agencies, if proven applicable, for relief of other threatened and endangered or raptor seasonal stipulations within Area C of the DCA.

5.0 Avoidance, Minimization, and Restoration Commitments

Restoration of Disturbed Habitat Areas

As a means of offsetting unavoidable disturbances due to oil and gas activities, Chesapeake will evaluate opportunities to implement avoidance, minimization or restoration measures in an effort

to enhance or create important seasonal sage-grouse habitats across the DCA landscape. Chesapeake agrees that a landscape level approach is appropriate because sage-grouse need large expanses of uplands dominated by sagebrush intermixed with native grasses, forbs, and mesic areas to survive and reproduce. Sage-grouse have a large home range that will generally exceed the size of most restoration projects and the location of restoration or rehabilitation sites should be within or juxtaposed next to existing key seasonal habitats to improve the chances for restoration success as well as use by sage-grouse.

Given the DCA has historically had sagebrush habitat converted to grassland or cropland that now rarely exceeds sufficient canopy cover (2011-5 EO, #8, page 10), as well as large disturbed wildfire burn areas that do not contain suitable sage-grouse habitat, various types of projects will likely be necessary to restore suitable habitat. Implementation of both passive and active restoration projects to enhance sage-grouse habitat and populations within the DCA will be evaluated. Passive restoration would focus on maintaining sagebrush cover while increasing native grass and forb cover by altering land management activities to achieve the desired habitat changes. Active restoration would entail reestablishing sagebrush cover and an herbaceous understory consisting of a mixture of native grasses and forbs in areas currently devoid of these vegetative components. All parties to the Plan will seek support by landowners and stakeholders, and identify sage-grouse as a primary beneficiary.

Examples of restoration or rehabilitation opportunities for consideration in the DCA could include the following:

Possible Passive Restoration

- *Develop and Implement a Sustainable Livestock Grazing Management Strategy* – work with landowners to develop customized grazing strategies that enhance the productivity and sustainability of grazing lands and provide benefits to sage-grouse.
- *Development of Additional Water Management Practices* – surface water available for livestock and wildlife is severely limited within the DCA. Developing additional water sources that distribute livestock and wildlife across the landscape could also be designed to provide benefit to sage-grouse so that key sagebrush habitat is avoided. In addition, new water sources could be used to enhance or create sage-grouse brood-rearing habitat. For example, Chesapeake typically drills water wells for use with multiple area pads that could be resourced for other water management needs.

Possible Active Restoration

- *Sagebrush Restoration Opportunities* –develop and implement land management plans directed to restore sagebrush cover and a native understory component in disturbed lands (e.g. wildfire areas) or unsuitable habitat (e.g. historic sagebrush treatments, monoculture of cheatgrass).
- *Herbaceous Understory Rehabilitation Opportunities* - where sagebrush overstory is intact but understory vegetation is degraded, appropriate techniques will be utilized to inter-seed with native grasses and forbs to meet seasonal habitat needs. Areas for consideration would include pre-1994 treatment areas (Figure 1) where sagebrush has been reestablished but the herbaceous understory is dominated by crested wheatgrass.

- *Watershed Rehabilitation Opportunities* – develop plans to stabilize and revegetate segments of drainages that are highly eroded or unstable. Successful restoration of these areas would enhance mesic areas for use by sage-grouse and livestock.

To guide and facilitate passive and active restoration efforts and in conjunction with State, WGFD, or other sage-grouse experts, Chesapeake will coordinate and manage a restoration team that could consist of landowners, state and federal agency personnel (i.e., WGFD, OSLI, Natural Resource Conservation Service, Bureau of Land Management), University of Wyoming Restoration and Reclamation Center, Conservation District staff, biologists, and/or reclamation specialists. The team would meet regularly to clearly define goals and objectives of a plan for restoration within the DCA, outline decision making processes, define responsibilities of various stakeholders, develop obtainable timelines, review and approve proposed restoration projects, and coordinate monitoring plans to promote success of the restoration efforts with the goal of maintaining sage-grouse populations within DCA. The restoration efforts will be primarily focused in or immediately adjacent to Area A.

Restoration, whether passive or active, cannot be accomplished without financial commitment; Chesapeake is willing to assist with funding to be used in the restoration of lands within the DCA. Funding would be provided based on the amount of Chesapeake disturbance to date and on an annual basis based on anticipated future Chesapeake disturbance (“Chesapeake Disturbance”) in un-disturbed areas (non-pink areas on Figure 1). Chesapeake will offer the following formula for restoration of areas offsetting the Chesapeake Disturbance for the purpose of mitigating disturbance caused from its oil and gas activity.

For Chesapeake Disturbance to date and for anticipated future Chesapeake Disturbance the following formula will be used on a per acre basis: *Average Surface Footprint per Location, multiplied by the Average Cost for Restoration multiplied by the Mitigation Ratio of 3:1* (“*Restoration Formula*”). The ‘*Average Surface Footprint per Location*’ accounted for in the Restoration Formula is liberally based upon an average of twenty (20) acres per location (inclusive of well pad, facilities pad, access road, power line, and associated pipeline) although, actual Chesapeake disturbed acreage is often less than twenty (20) acres and it is anticipated to continue to be less than twenty (20) acres in the future. This funding calculation assumes “qualified disturbance” are pads located outside of the known disturbed areas, or designated pink areas on attached figures. The 20 acre per location factor considers all the acreage is suitable habitat but known aerial mapping and field investigation confirms that is definitely not the case. The ‘*Average Cost of Restoration*’ considers average costs for passive or active restoration activities previously noted. Based on cost estimates from qualified restoration contractors and other restoration experts, Chesapeake will consider \$1300 per acre of qualified disturbance as an average cost per acre of restoration. The ‘*Mitigation Ratio of 3:1*’ establishes that for every 1 acre of qualifying disturbed habitat, Chesapeake will provide funds towards restoring 3 acres to help offset the loss of habitat or ecosystem functionality.

Utilizing the above Restoration Formula, Chesapeake offers to contribute restoration funding for 780 qualified acres disturbed to date (260 acres in non-pink areas disturbed to date x 3) which amounts to \$1,014,000 for sage-grouse habitat restoration projects within the DCA. Per anticipated 2013 development, Chesapeake offers to contribute ahead for 2013 into the restoration funding for 1380 qualified acres (460 acres of proposed disturbance in non-pink areas in 2013 x 3) which amounts to \$1,794,000 for sage-grouse habitat restoration projects within the

DCA. (Note: current DDCT information on file with WGFD is for both proposed and constructed activities while the above numbers are based on qualified pads constructed to date and proposed for construction in 2013). Thereafter, on an annual basis through 2015, Chesapeake will calculate the estimated disturbance using the Restoration Formula for the following year, and will pay such funds prior to commencing construction of any additional pads for that following year. In conjunction with this Plan, Chesapeake will provide restoration funding to the designated fund to provide assistance for projects that will enhance sage-grouse populations or sagebrush habitats in the DCA.

Chesapeake understands per the State that restoration funds will be managed by entering into an Escrow Agreement with the Wyoming Wildlife – The Foundation (WW-TF) which is a component fund of the Wyoming Community Foundation (WyCF). Chesapeake will contribute funds into WyCF based on the Chesapeake Disturbance and Restoration Formula (“Chesapeake Funds”). In the event such exist, Chesapeake Funds and any applicable matching funds provided by other entities would be referred to collectively as “Restoration Funds”. The Escrow Agreement shall allow Chesapeake, after consultation with the restoration team, the right to give instruction as how to distribute and direct Restoration Funds. Chesapeake requires any Restoration Funds be used to maximize restoration efforts within the DCA. If the Restoration Funds exceed practical restoration efforts within the DCA then upon mutual agreement with Chesapeake, FWS, WGFD and State, these funds could be considered for sage-grouse projects across the Wyoming sage-grouse range. Also, if any Chesapeake Funds are not used for restoration projects before end of 2018, at Chesapeake’s discretion, Chesapeake shall be refunded any Chesapeake Funds. Chesapeake reserves the right to qualify funded projects based on schedule and quality and not solely on the lowest bid. Chesapeake shall be allowed to use up to ten percent (10%) of the Restoration Funds towards monitoring or project management. These allocated funds could offset costs for general vegetation restoration or sage-grouse population monitoring including but not limited to annual lek monitoring, DCA-wide lek surveys, restoration project area baseline vegetation assessments, etc. The WyCF fee structure will be agreed upon between Chesapeake and WyCF in the Escrow Agreement and is not to exceed 1% of the allowable 10%. Chesapeake may incur additional expenses outside the Restoration Funds to staff appropriately a Plan manager and other outside contractors. Chesapeake’s commitment to provide funding for restoration or rehabilitation opportunities is made on a voluntary basis and shall not create any additional liability to Chesapeake.

Avoidance and Minimization

Chesapeake and Access currently apply various avoidance and minimization practices within their operations in the DCA. These minimization practices are chosen and then implemented based on site assessments that are conducted by Chesapeake, Access, or a qualified third party contractor per construction activity. Recordkeeping for these practices are maintained by Chesapeake and Access as well as applicable DDCT worksheets are submitted to the WGFD and then subsequently to the FWS. Chesapeake and/or Access currently implement the following efforts wherever possible to minimize the decline of sage-grouse populations within the DCA with a focus on habitat avoidance or enhancement and the minimization of habitat fragmentation: narrow right-of-ways; co-locate pipelines and access roads; use reasonable raptor proofing measures on power poles; manage water to consolidate water wells to service multiple completion jobs; coordinate with local land owners and county fire departments for the use of

fresh water pits as fire suppressant supply; integrate perimeter drilling and longer laterals to avoid leks; and drill multiple wells on one pad serviced by one road to reduce the surface footprint.

In addition, Chesapeake is evaluating the implementation of additional efforts, subject to landowner approval, such as:

- Marking high-risk fences around pads to reduce sage-grouse strike risks;
- Reducing dust from roads during sage-grouse seasonal habitats;
- Developing an integrated weed management plan to abate noxious weeds
- Develop water management plans considering West Nile Virus controls

6.0 Performance Criteria and Limitations

Successful implementation of the Plan will require commitment from not only Chesapeake and Access but in conjunction with the State, WGFD, and the restoration team. Chesapeake considers the following as attainable performance measures while assuming each funded project will further detail monitoring and restoration performance criteria:

- Leks
 - To determine if the Plan is successful in maintaining sage-grouse populations in the DCA, Chesapeake and Access will conduct lek counts during the breeding season at the four identified leks (Bill Hall, Bill Hall #2, East Antelope #1, and Flat Top). Coordination will occur between Chesapeake, Access, and WGFD to monitor these leks on an annual basis in order to establish trends.
 - Identify previously undocumented leks within or surrounding the DCA. Chesapeake or Access will report to WGFD potential leks identified during site assessment evaluations or other DCA activity. According to WGFD standards, leks with < 5 males will be confirmed with 2 lek counts during breeding season and for 2 subsequent years before considered an official new lek. Leks with > 5 males will be confirmed with 2 lek counts during breeding season and for 1 subsequent year before considered an official new lek.
- Habitat Restoration
 - Select passive or active restoration projects with direction from the restoration team that will enhance or create sage-grouse habitat.
 - Since sagebrush re-establishment and appropriate grass or forb restoration success may be unlikely within the Plan's 3 year term, Chesapeake funded restoration projects will include an annual monitoring plan up to an additional 2 years. The costs to conduct appropriate monitoring will be estimated up-front into the restoration project cost estimate and these funds ear-marked to cover the monitoring plan. Monitoring activities may include documenting soil types, vegetation, weed control, water resources, and sage-brush re-establishment.

- Chesapeake and Access will apply adaptive management practices in consultation with the above defined team. Adaptive management practices will be applied to approved projects to monitor success.
- Chesapeake and Access will submit an annual report to WGFD and State including but not limited to: any Chesapeake funded project's objectives, project's performance and limitations, project acreage, percent of habitat restored, and sage-grouse population trends.
- Commit to annual meetings with Chesapeake, Access, WGFD, State, and possibly the designated representatives on the restoration team to review and, if necessary, modify the Plan.

While Chesapeake is committed to funding and coordinating high quality and applicable restoration projects within the DCA, all parties agree certain limitations beyond human control are possible. These limitations could thwart sage-grouse habitat restoration and thus hinder increasing sage-grouse populations. Below are examples of, but not inclusive of, potential limitations and considerable threats to sage-grouse habitats which could further limit Plan success:

- Current extreme drought conditions in Northeast Wyoming.
- Wildfires exacerbated by drought.
- Vandalism acts, natural disasters, weather events, or other wildlife predation on the restored vegetation or sage-grouse.
- Factors such as previous treatment methods, soil type or current land use which may hinder restoration of what otherwise appear to be optimum restoration locations.
- Unattainable landowner cooperation or agreements with regards to restoration of optimum locations. Restoration agreements are completely separate from oil and gas exploration surface use or lease agreements so supplemental funding to landowners for use of their land (i.e. to offset grazing) could not be made from the Chesapeake Funds. Chesapeake would expect partnering agencies like United States Department of Agriculture Farm Service Agency or NRCS could provide eligible landowner incentives and payments for conservation measures or wildlife habitat enhancements.

7.0 Summary of Plan

In an effort to further support sage-grouse populations in Wyoming, the State has developed the sage-grouse CPA strategy. The DCA is one of 31 CPAs in Wyoming with known sage-grouse habitat and populations. To further define this strategy, the EO identified stipulations aimed at limiting disturbances in suitable sage-grouse habitat to <5%, although prior to the implementation of the EO, disturbance levels in the DCA were above 15% in potentially suitable habitat. The DCA, with this high level of disturbance and thus poor habitat, does not support a large population of sage-grouse. Chesapeake, understanding the importance of the CPA strategy for Wyoming, is voluntarily providing this plan to the State. This Plan would allow for the incremental development of energy resources in the DCA while focusing on the protection of sage-grouse populations. Chesapeake is committed to properly implementing this Plan with

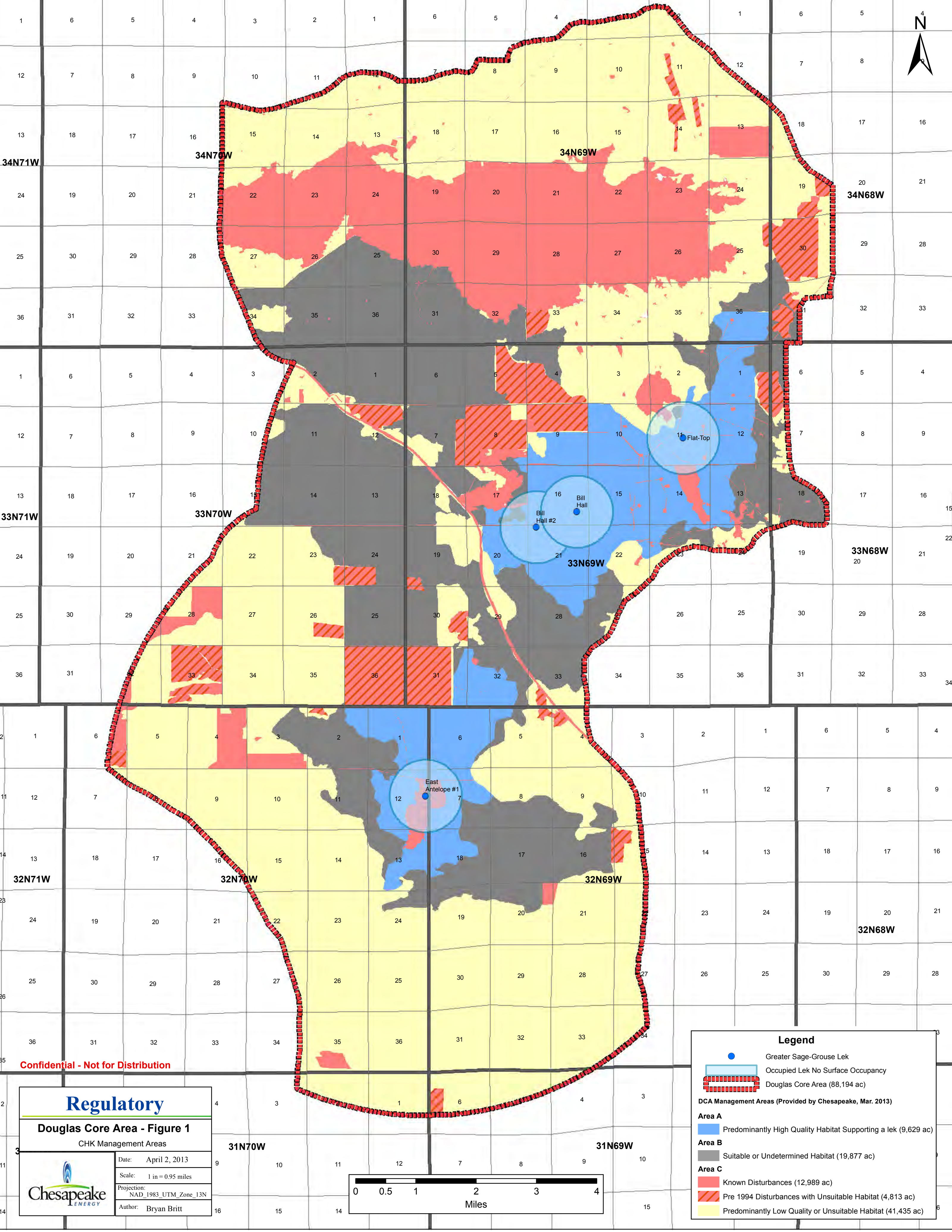
WGFD and State however, with the understanding by all parties that the sage-grouse population may not improve due to conditions beyond human control.

This Plan includes three distinct sage-grouse management areas in the DCA that have been designed to develop the oil and gas resource in compliance with the EO stipulations: Area A will defer new development disturbances for 3 years followed by evaluation for extension as set forth herein in order to reduce effects to lek populations and minimize habitat fragmentation; Area B, which contains sagebrush cover that is predominantly considered to be suitable and therefore is an area where development can continue pending a site assessment to verify that the development will be conducted in accordance with all EO stipulations; and Area C, which predominantly contains existing disturbed areas and low quality or unsuitable habitat and therefore is considered to be an area where development can continue pending a site assessment to verify that the development will be conducted in accordance with EO stipulations with the exception of seasonal use, density and traffic management.

As a means of offsetting surface disturbances due to oil and gas activities, Chesapeake proposes to evaluate and fund restoration or rehabilitation measures with the goal of maintaining, enhancing, or creating important seasonal sage-grouse habitats primarily near or adjacent to the leks. Chesapeake will coordinate and manage a volunteer restoration team with applicable stakeholders to collaboratively develop a DCA restoration plan. Each restoration project within the DCA will likely be site specific, but consist of either passive or active restoration approaches. Passive restoration would focus on maintaining sagebrush cover while increasing native grass and forb cover by altering land management activities to achieve the desired habitat changes. Active restoration would entail re-establishing sagebrush cover and an herbaceous understory consisting of a mixture of native grasses and forbs in areas currently devoid of these vegetative components. Performance criteria and limitations will be carefully and regularly monitored by Chesapeake, Access, WGFD, State, and other restoration team experts for sustainable implementation of the Plan.

Although not required, Chesapeake believes efforts that help restore healthy sagebrush communities are necessary to help minimize impacts to sage-grouse or their habitat from historic land uses, wildfires, and current energy development within the DCA. This Plan which includes proposed management objectives, restoration projects, and avoidance/minimization practices reinforces Chesapeake's commitment to responsibly develop oil and gas resources in an environmentally sensitive area of Wyoming.

Should this Plan be accepted by State and the sage-grouse be later listed under ESA, the parties agree that Chesapeake and Access shall cease to continue to proceed under this Plan.




Confidential - Not for Distribution

Regulatory

Douglas Core Area - Figure 1

CHK Management Areas

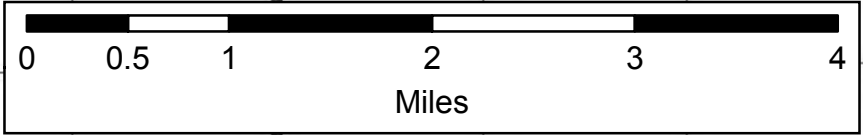


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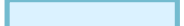
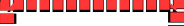
Scale: 1 in = 0.95 miles

Projection: NAD_1983_UTM_Zone_13N

Author: Bryan Britt




Legend


-  Greater Sage-Grouse Lek
-  Occupied Lek No Surface Occupancy
-  Douglas Core Area (88,194 ac)

DCA Management Areas (Provided by Chesapeake, Mar. 2013)




Area A

-  Predominantly High Quality Habitat Supporting a lek (9,629 ac)

Area B

-  Suitable or Undetermined Habitat (19,877 ac)

Area C

-  Known Disturbances (12,989 ac)
-  Pre 1994 Disturbances with Unsuitable Habitat (4,813 ac)
-  Predominantly Low Quality or Unsuitable Habitat (41,435 ac)

